Contribution ID: **16** Type: **not specified**

High energy neutrinos from cosmic ray interactions in the sun

Wednesday 31 August 2016 12:00 (30 minutes)

When cosmic rays hit the sun high energy neutrinos, along with many other particles, are produced as a result of a chain of interactions and decays in a process similar to how particles are produced in the Earth's atmosphere. The high energy neutrinos produced in such a fashion will propagate and oscillate from the Sun to the Earth and can in principle be detected by modern neutrino detectors such as IceCube. It is important to estimate this flux as it would act as a background for the hypothesized neutrinos coming from WIMP annihilations in the solar interior. In addition a detection can provide additional astrophysical information about neutrino oscillation parameters. We perform an updated calculation of the neutrino flux from cosmic ray interactions in the sun, including full cascade evolution in the solar atmosphere in a modern fashion and neutrino propagation and oscillation from the Sun to the Earth.

Author: NIBLAEUS, Carl (Stockholm University)

Session Classification: Session